REMARKS

The present amendment makes editorial changes and corrects typographical errors in the specification, which includes the Abstract, in order to conform the specification to the requirements of United States Patent Practice. No new matter is added thereby. Attached hereto is a marked-up version of the changes made to the specification by the present amendment. The attached page is captioned "**Version With Markings To Show Changes Made**".

In addition, the present amendment cancels original claims 1-10 in favor of new claims 11-20. Claims 11-20 have been presented solely because the revisions by red-lining and underlining which would have been necessary in claims 1-10 in order to present those claims in accordance with preferred United States Patent Practice would have been too extensive, and thus would have been too burdensome. The present amendment is intended for clarification purposes only and not for substantial reasons related to patentability pursuant to 35 U.S.C. §§101, 102, 103 or 112. Indeed, the cancellation of claims 1-10 does not constitute an intent on the part of the Applicants to surrender any of the subject matter of claims 1-10.

Early consideration on the merits is respectfully requested.

Respectfully submitted,

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Version With Markings To Show Changes Made

~~Description~~ S P E C I F I C A T I O N

~~Portable telephone~~

TITLE OF THE INVENTION

"PORTABLE TELEPHONE"

BACKGROUND OF THE INVENTION

~~**The invention relates to a portable telephone according to the preamble of claim 1.**~~

For inputting call numbers and for controlling specific additional functions, a telephone usually has a numerical keypad with a small number of supplementary keys. Convenient fixed-network telephones are often also equipped with a larger number of supplementary keys for controlling added-feature functions. In the case of portable telephones, the provision of a large number of input keys is impossible precisely because of the aimed-at minimization of the volume ~~so that in such telephones~~. As such, it is known to perform alphanumeric inputting and to implement a wide variety of functions by multiple assignment of the numerical keys and menu prompting controlled by a small number of supplementary keys.

Touch-sensitive displays, what are referred to as touch screens, in which the user makes an input by applying point pressure to the surface which serves simultaneously as a display field and input field, have also been known for a long time. In higher quality designs, such touch screens permit inputs to be made by handwriting. They have come to be a widespread display and input device for relatively complex hand-held electronic devices, for example for organizers, PDAs or hand-held PCs.

Touch screens are costly and mechanically sensitive components which require mechanical protection in the unused state ~~in particular~~; particularly in view of their high cost which makes up a considerable portion of the price of organizers or PDAs, etc. This protective function is usually performed by covers which are slid or folded over the touch screen. These covers generally prevent the touch screen, and thus the device, from being used in the protected state. In another widespread design, organizers or hand-held PCs ~~comprise~~ include two part

housings, one of which is fitted with an input keypad on its surface and the other with a display~~, and in~~. In the closed state, the display and input keypad are situated one over the other, protected in the interior of the closed housing.

The development of the mobile telephone sector into a mass market has also seen the development of combination devices which advantageously combine the functions of a mobile telephone and those of an organizer or PDA. Such combination devices are usually composed of two part housings which are connected to one another in a foldable fashion ~~by means of~~ via a hinge. Such devices, which can be referred to as multi-function mobile telephones, are designed in one embodiment as a folding housing of the type of the abovementioned organizers or PDA with a conventional input keypad and conventional LCD display. In a further known embodiment, such mobile telephones have a touch screen onto which a telephone keypad is folded in the function as a mobile telephone, while this keypad is folded away in the organizer function and exposes the entire touch screen. This enables the entire organizer or PDA functionality to be used. In telephone mode, the cover also exposes part of the touch screen, providing a reduced display for operating the telephone. In this case, a different display mode from that of the organizer function ("portrait" representation instead of "landscape" representation) is, of course, selected.

The known portable telephones of this type are still extremely bulky, which is due, inter alia, to the fact that an appropriate and convenient organizer function requires a certain size of the touch screen, and ~~in addition it~~ there is still ~~necessary~~ the necessity to accommodate further, in some cases relatively large, input elements and output elements on the surface of the device.

The present invention is, therefore ~~based on the object of disclosing,~~ directed toward an improved portable telephone which constitutes the implementation of a relatively large touch screen with minimal housing dimensions.

~~The object is achieved by means of a portable telephone having the features of claim 1.~~ SUMMARY OF THE INVENTION

The present invention ~~comprises~~ includes the essential idea of reserving that surface of the device which holds the touch screen as far as possible solely for the touch screen and of refraining from accommodating any other functional components on ~~said~~ the surface. This permits the housing to be shortened.

In one preferred embodiment of the present invention, the customary user behavior is appealed to, in particular, by the fact that the input ~~means~~ parts for the telephone mode are embodied as a conventional mobile phone keypad. In a first embodiment of such a keypad, the keys on the reverse side, facing the touch screen, of the second part of the housing which is fitted with the keypad each have a pressure pin. A suitable embodiment, known per se, of the keys with what are referred to as "snap-action disks" or similar ~~means~~ parts can, in addition to the familiar external appearance of a mobile phone keypad, also provide comparable activation feedback. In another embodiment, the input keypad is an independent mobile phone keypad which is completely separate from the touch screen. ~~Said~~ This keypad can be designed in the way which is customary with mobile telephones or, in order to make the overall size as small as possible, ~~it~~ can be provided with a film keypad or similarly flat keypad.

In an alternative embodiment of the present invention, which is even easier and more cost-effective to implement, the input ~~means~~ parts are formed by recesses in the second part of the housing (which has essentially only the function of a cover here) in conjunction with input fields represented on the touch screen. A keypad is, as it were, "simulated" by the interaction of recesses and touch screen input fields. The advantage of great simplicity is, however, compromised in this embodiment by certain ergonomic disadvantages.

In a preferred mechanical embodiment-, which is known per se-, the two parts of the housing are connected to one another by a hinge and can be pivoted with respect to one another. The second part of the housing essentially entirely exposes the touch screen in a first pivoted position, and essentially completely

covers it in a second pivoted position (in which the telephone mode is implemented).

In an alternative embodiment to the above, the two parts of the housing are connected to one another in a displaceable fashion ~~by means of~~ via respective guides~~, and here also~~. Here, the touch screen is entirely exposed in a first position, the organizer/PDA operating position, and covered in a second position, the telephone operating position.

In both embodiments, the second part of the housing has a window through which the part of the touch screen which is essential for a telephone mode can be viewed, but which, together with the other regions of the second part of the housing, covers the entire surface of the sensitive touch screen and protects it against damage. In one particularly simple embodiment, this window can, however, ~~also~~ be omitted and a simple housing cutout provided in its place.

The proposed device advantageously has an input function change-over switch which is actuated when the two parts of the housing move relative to one another and brings about a change-over between a touch screen input mode (organizer/PDA mode) and a keypad input mode (telephone mode), part of the touch screen being switched in a special way as a telephone display in the latter mode.

In one appropriate embodiment of the housing shells, a recess for holding an input pin for activating the touch screen is advantageously provided on its side, where ~~said~~ the pin is always to hand, preferably attached in a captive fashion.

~~Advantages and expediencies of the invention also emerge from the subclaims and the following description of a preferred exemplary embodiment with reference to the figures, of which:~~ Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the Figures.

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows an oblique view of a mobile telephone according to an embodiment of the present invention with a closed housing~~, and~~.

~~figure~~ Figure 2 shows an oblique view of the mobile telephone shown in ~~figure~~ Figure 1 with the housing opened and the touch screen exposed.

DETAILED DESCRIPTION OF THE INVENTION

Figures 1 and 2 show a perspective view of a mobile telephone 1 with the supplementary functionality of a palmtop. The mobile telephone 1 ~~comprises~~ includes a first housing part 3 and a second housing part 5, which are connected to one another in a pivotable fashion ~~by means of~~ via a two-part folding hinge 7a, 7b on one longitudinal side.

A touch screen 9 which occupies virtually the entire surface is provided on the upper side of the first housing part 3 as an input and display device of the mobile telephone in the palmtop operating mode. In one side face 3a of the first housing part 3, a recess 11 for a ballpoint pen 13, which serves as an input pin for the touch screen 9, is provided. Furthermore, the first housing part is fitted with an antenna 15 and has a connecting bushing 17 for a data line. A microphone (a telephone transmitter) 19 is positioned on the lower end face 3b of the first housing part 3.

The upper side of the second housing part can be seen in ~~figure~~ Figure 1 and its lower side -(in the folded-open state of the mobile telephone 1-) can be seen in ~~figure~~ Figure 2. In ~~figure~~ Figure 1, it is apparent that a telephone receiver 21 and an input keypad 23 for implementing the telephone functions are accommodated in the second housing part 5. A display window 25 is provided between the telephone receiver 21 and the input keypad 23 (in the arrangement which is customary per se in mobile telephones), ~~said~~ the display window 25 exposing a section 9a of the touch screen 9 to the user's view even when a housing of the mobile telephone 1 is closed. The input keypad 23 is-, as is apparent from ~~figure~~ Figure 2-, embodied on its underside facing the surface of the touch screen 9 as a mechanical key array 23' ~~by means of~~ via which pressure is exerted on a specific region of the touch screen 9 when a key is actuated, and a numerical input or a function in the telephone mode is triggered. For this purpose, for example a blunt plastic or hard-rubber pressure pin 23.1 can be connected to each key and the key can be prestressed in an upward direction by a spring element.

In the closed state of the mobile telephone 1, the touch screen 9 is actuated in the telephone mode in such a way that the configuration of the pressure pin array 23' of the input keypad 23 is assigned an input mask using the mobile telephone MMI (Man-Machine Interface) of a conventional mobile telephone.

In the opened state shown in ~~figure~~ Figure 2, a PC user interface is activated, wherein a respective start menu ~~being~~ is firstly called when the cover is opened. In order to change over between the operating modes, a change-over switch 27 which is embodied as a key button is provided on the underside of the second housing part 5, which key button can, of course, be used to change over the display and the input mode of the touch screen at the same time as the change-over of the mode of operation. In order to connect the telephone receiver 21 and the change-over switch 27 to the printed circuit board of the mobile telephone, a line which runs within the folding hinge 7b and which leads out of the second part 5 of the housing into the first part 3 of the housing is provided.

The present invention is not restricted to the exemplary embodiment described, but rather is also possible in a multiplicity of refinements within the scope of activity by a person skilled in the art. In particular, refinements in terms of the specific arrangement of the telephone transmitter and telephone receiver are possible, the arrangement of the relatively bulky telephone receiver in the second housing part covering a section of the touch screen constituting an essential feature of the present invention. It permits, in particular, the telephone housing to be shortened, corresponding to an important desire on the part of customers.

A recess for an input pin ~~can~~ also can be provided at another location~~;~~, for example, in the base region of the first housing part or else on the second housing part~~; however,~~. However, it ~~can~~ also can be dispensed with.

Instead of the mobile telephone described above, a cordless telephone with expanded functionality ~~may~~ also may be embodied in the way explained in order to provide a display and input screen which is as large as possible in area for the supplementary function (database, pocket translator, organizer or the like) with minimum housing dimensions.

Indeed, although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.

ABSTRACT OF THE DISCLOSURE

A portable telephone, in particular a mobile telephone ~~(1)~~ or a cordless telephone, having a display and input device which is arranged on a surface of a first part ~~(3)~~ of the housing and is embodied as a touch screen~~(9)~~, and a second part ~~(5)~~ of the housing which essentially covers the touch screen in a first operating position and essentially exposes it in a second operating position, and which has additional input ~~means (23)~~ parts, the second part of the housing accommodating a telephone receiver ~~(21)~~ in such a way that ~~said~~ the receiver is situated over the touch screen ~~(9)~~ in the first operating position.

~~(Fig. 2)~~